

EDUCATION

2010-present: **The Courant Institute of Mathematical Sciences**, NYU, New York, NY.
Ph.D. in Computer Science, specializing in Distributed Systems (2015), cumulative GPA: 4.0/4.0
2005-2010: **The Cooper Union for the Advancement of Science and Art**, New York, NY.
Masters of Electrical Engineering (2010), cumulative GPA: 4.0/4.0
Bachelors of Electrical Engineering (2009), cumulative GPA: 3.44/4.0

RESEARCH INTERESTS

Distributed systems, performant GIS, low-latency RDMA-capable networking, operating systems, wearable/ubiquitous computing, mobile/embedded hardware and software design.

RESEARCH AND WORK EXPERIENCE

[See also z80.me/pubs.html]

Courant Institute of Mathematical Sciences NYU, New York, NY
Postdoctoral Research Fellow, Graduate Research Assistant, Teaching Assistant 2010-Present
Demonstrated principles of design for systems on RDMA-capable datacenter networks by building high-performance distributed in-memory storage systems. Built and tested Cell and Pilaf systems. [1, 2]
Designed and implemented Oolong, a distributed framework for asynchronous applications, building on the concept of database triggers. [3, 4]

Research Intern, IBM Watson Summer 2014
Explored distributed cognitive computing systems. Designed distributed multi-tiered caching system for conceptual search; designed and implemented novel flexible computation systems using wimpy nodes.

Research & Development Programmer, Nicira Inc. Summer 2013
Designed and implemented new distributed application architecture for manipulating software-defined networking system state. Experience welding general purpose and proprietary declarative/reactive languages.

Center for Signal Processing, Communications, and Computer Engineering (S*ProCom²) Cooper Union, New York, NY
Research Fellow, Continuing Education Instructor 2007-2010
Created Master's thesis on Convolutional Neural Networks for facial detection and recognition in wearable computing systems. Implemented and optimized state-of-the-art image processing algorithms for HUDs. [4]
Research into FPGA security applications and GPGPU-parallelized algorithms.

Research & Development Programmer, Bloomberg Summer 2009
Software engineering of monitoring, debugging, and support tools for realtime financial data delivery software. Linux and Solaris development of backend and frontend components for high-load, low-latency systems.

Binghamton University, Stevens Institute of Technology Binghamton, NY; Hoboken, NJ
NSF REU Research Fellow Summer 2007, Summer 2008
Designed complete node hardware and software for physical small-scale wireless network testing. [6] Designed system to segment cells in microscope images as a method of detecting precancerous tissue regions.

HONORS

Engineer Intern (*Passed Fundamentals of Engineering Exam, 2009*)
The Cooper Union for the Advancement of Science and Art, full-tuition scholarship (*2005-2010*)
Dean's List, Spring 2008, Fall 2008, Spring 2009
Outstanding Summer Research Award, Stevens Institute of Technology REU (*2007*)

SELECTED PUBLICATIONS

[See also z80.me/pubs.html for full list]

- [1] C. Mitchell, L. Nelson, K. Montgomery, S. Sen, J. Li, "Balancing CPU and Network in the Cell Distributed B-Tree Store," in Proc. of Usenix ATC 2016, Denver, Colorado, June 22-24, 2016.
- [2] C. Mitchell, Y. Geng, J. Li, "Using One-Sided RDMA Reads to Build a Fast, CPU-Efficient Key-Value Store," in Proc. of Usenix ATC 2013, San Jose, California, June 26-28, 2013.
- [3] C. Mitchell, R. Power, J. Li, "Oolong: Asynchronous Distributed Applications Made Easy," in Proc. of APSys 2012, Seoul, South Korea, July 23-24, 2012.
- [4] C. Mitchell, "Applications of Convolutional Neural Networks to Facial Detection and Recognition for Augmented Reality and Wearable Computing," Master's thesis, Cooper Union, New York, defended May 3, 2010, 148pp.
- [5] C. Mitchell, *Programming the TI-83 Plus/TI-84 Plus*, Manning Publications, Fall 2012, 352pp.
- [6] C. Mitchell, *Using the TI-84 Plus, Second Edition*, Manning Publications, Summer 2015, 325pp.
- [7] C. Mitchell, V. Munishwar, S. Singh, X. Wang, K. Gopalan, and N. Abu-Ghazaleh, "Testbed Design and Localization in MiNT-2: A Miniaturized Robotic Platform for Wireless Protocol Development and Emulation," in Proc. of ComsNets09, Bangalore, India, January 5-10, 2009, 10pp.

SELECTED PERSONAL PROJECTS

[See also z80.me/projects.html for full list]

- » **Doors CS**: shell for graphing calculators in z80/ez80 ASM. Components include custom two-wire peer networking protocol, and extensive GUI APIs. Many other z80 ASM programs, such as a web browser, text editor, GPS, and games.
- » **Clove 2/3**: One-handed Bluetooth/wireless typing glove for wearable computing and mobility-challenged applications.
- » **Cemetech**: Creator, designer, and maintainer of a 14K-member programming community. Creation of a portfolio of software and hardware projects, some as "Kerm Martian." Two books about graphing calculators. [5, 6]

REFERENCES

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